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Tooth Loss in a Substance Abusing Inner City Population A. KHOCHT*, S. KELLER & S SCHLEIFER. (UMDNJ New Jersey Dental School & New Jersey Medical School, Newark, New Jersey, USA)

The devastating effects of substance abuse on behavior and health are well documented The objective of this study was to evaluate tooth loss among substance abusers Fifty four subjects (30 males 24 females), all African Americans with age ranging from 23 to 65 years, were recruited from an addiction recovery clinic There was documented history of substance abuse (10 alcohol, 14 other substances primarily cocaine, 30 alcohol together with other substances) A control group of 11 non-substance abusers was recruited from within the same environment A group of periodontitis patients (n = 25) with no history of substance abuse was also evaluated All subjects were free from systemic illnesses and were not taking medication which might affect their oral status Number of missing teeth was recorded for each subject Ninety one percent of abusers (n = 49) and controls (n = 10) were dentulous Mean number of missing teeth among dentate subjects was 7 91 ± 6 98 for substance abusers 4 90 ± 5 58 for controls and 3 12 ± 3 39 for periodontitis group Differences between the three groups were statistically significant, P< 0 005 Difference between substance abusers and periodontitis group was statistically significant, P < 0 001 Differences between control group with periodontitis group and with abuse group were non-significant Alcohol abusers (n = 37) had significantly higher mean tooth loss 8 97 ± 7 54 than non-alcohol abusers (n = 47) 3 89 ± 3 93, P<0 0001 The results of this study showed that tooth loss is high among substance abusers and it significantly associates with alcohol abuse This study was supported by NIDR Grant # DE10592

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Restoration and Cusp Fractures and Root Fragments Status at 24 Months M W HEFT*, G H GILBERT, T A DOLAN, and U FOERSTER (Claude D Pepper Center University of Florida, Gainesville, FL, USA)

The potential for tooth and/or restoration fracture is a significant factor when evaluating tooth status for restorative treatment planning Thus for example, a prosthetic crown may be preemptively placed in anticipation of crown fracture, rather than to solely replace missing functional tooth structure To gain a greater understanding of the factors that support those decisions, we assessed (1) the prevalence and incidence of restoration (B) and cusp (C) fractures and root fragments (R), (2) the 24 mo clinical sequelae of B, C, and R, and (3) whether B, C, or R are significant antecedents of tooth extraction or crown placement Data were derived from the Florida Dental Care Study, a prospective longitudinal study of oral health and dental care (Gilbert et al , 1997) in dentate adults aged ≥ 45 yrs Baseline data collection commenced in 1993 with 873 participants (Ss), 723 participated in the 24-mo clinical examination The Baseline and 24-mo sessions included an in-person interview (e g , demographic factors, symptoms, health behaviors, etc) followed by a clinical examination (7 tooth-specific factors including B, C, or R, tooth loss, and crown placement) At Baseline the prevalence of B was 0 9% (142 teeth), C was 1 1% (172 teeth), and R was 1 0% (171 teeth) of the 16,370 teeth present At 24 mo , the incidence of B was 95 teeth, C was 105 teeth, and R was 84 teeth, afflicting 10%, 11%, and 7% of Ss, respectively These incidence estimates were the lower bound because some teeth presumably fractured in the interim, but were restored before the 24 mo exam At 24 mo , 26/142 (18 3%) of B at Baseline were then C or R, 7/172 (4 1%) of C at Baseline were then R, and 10/142 (7%) of B, 4/172 (2 3%) of C, and 33/171 (19 3%) R had been extracted by the 24 mo exam Of the teeth identified as B, C or R at Baseline, 47/176 (26 7%) had been extracted by the 24 mo exam Further, 17/142 (12%) of B and 6/172 (3 5%) of C were restored with a crown at the 24 mo exam Of the incident crowns at 24 mo , 23/228 (10 1%) were identified as B C, or R at Baseline The incidence of B, C, and R is of sufficient magnitude to warrant consideration in oral health policy Support DE12587, DE11020, DE00392

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Preliminary Data on Tooth Fracture in a Military Population. L J CONN*, J D BADER[1] D A SHUGARS[1], K R KOFFORD[1], J A WINEMAN[1] (*Univ of Texas Health Science Center at San Antonio, [1]Univ of North Carolina, U S Army Dental Activity, Ft Hood, TX)

To increase the resistance to fracture, posterior endodontically treated teeth are recommended to receive coronal coverage restorations However, the literature has shown that over 50% do not This observational study in a military population compares characteristics of fractures occurring in endodontically treated posterior teeth (ET) (n=18) and in vital posterior teeth (VT) (n=58) Observations regarding the military Dental Classification (DC) for ET were made The distribution of fractures in ET and VT by tooth type was similar, approximately 20% in max molars, 15% in max premolars, 60% in mand molars, and 5% in mand premolars Facial trauma was associated with only 5% of fractures in both ET and VT Fractures involved exposed dentin in about 89% of ET and VT teeth, and exposed pulp chambers in about 6% of ET and VT teeth Caries was associated with fracture significantly (p<0 05) more frequently for VT (45%) than ET (17%), while fracture extension apical to the gingival crest and the CEJ was significantly more frequent for ET teeth (72% and 56%) than VT (24% and 15%) While numbers of teeth within a tooth type did not permit statistical comparison, ET teeth tended to have more filled surfaces ET fractures were reported significantly sooner than VT For ET, the mean time from endodontic treatment until fracture was 45 3 months (Range 0 2 to 209 9) Most soldiers experiencing an ET fracture were classified as DC 2 (having the potential but not expected to result in dental emergencies within 12 mo) before the fracture (74%) and a DC 3 (oral conditions that if not treated are expected to result in dental emergencies within 12 mo) after the event (68%) The care delivered to ET fractures included buildups (37%), extractions (26%) and palliative care (37%) Fractures in ET were more severe than VT Caries was less frequently a factor in ET fractures. This preliminary observational study suggests that classification of soldiers with ET teeth without coronal coverage as having slightly elevated potential for dental emergencies is appropriate. Supported by NIDCR R01 DE12635

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Determination of Specific Tooth At-Risk Rates for Cusp Fracture Bader J [*1] Olson O[2] Martin J[2], Shugars D [1] ([1]Univ North Carolina Chapel Hill [2]Kaiser Center for Health Research, Portland OR)

To calculate population-based, tooth-specific rates of cusp fracture from observed frequencies of tooth-specific cusp fracture in a defined population, the number of teeth at risk for fracture in that population must determined for each specific tooth Teeth at risk are defined as those present but not crowned A random sample of 320 charts of dentate eligible members of a large HMO were examined by a trained auditor to assess at-risk status of each tooth Kappa values (simple) for counts of crowned and uncrowned teeth present by tooth type (max/man, ant/pre/mol) were >0 7 for 10 of 12 intra-auditor comparisons and for 11 of 12 check auditor comparisons Age and gender were determined from the HMO s administrative data The percent distribution of teeth missing, crowned and at-risk was determined for each tooth overall and by sex (m=150 f=170) and age group (18-39 (n=117) 40-55 (n=117), 56+(n=86)) Logistic regressions of at-risk status by age group and sex were run for each tooth to examine the independent effects of these population characteristics At-risk status was significantly associated (p<0 01) with age group for all maxillary teeth except #1 and for all mandibular 1st and 2nd molars as well as #25 and #29 In all instances older age groups had a smaller likelihood of a tooth being at risk In contrast at-risk status was significantly associated with sex only for 3rd molars where females had a smaller likelihood of a tooth being at risk Overall at-risk rates by tooth type ranged from 25% for tooth #1 to 96% for tooth #26 Differences in at-risk rates for molar teeth by age group were substantial For example for 18-39 year-old men 90% of maxillary 1st molars were at risk, while 9% were not present and 1% were crowned In 56+ year-old men, 51% of 1st molars were at risk with 34% not present and 15% crowned These rates serve to illustrate the importance of determining individual at-risk rates for specific teeth in a defined population, heretofore not reported, and the importance of adjusting at-risk rates for population characteristics such as age group and sex Supported by NIDCR R01 DE12635

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ART restorations and sealants in Chinese schoolchildren – three-year results HOLMGREN CJ[1]* LO ECM[1] WAN HC[2] HU DY[2] ([1] Faculty of Dentistry University of Hong Kong [2] WCUMS Chengdu China)

Objectives These were to assess whether ART restorations and sealants could be provided to children in a school environment in China to assess the patient acceptability of the ART approach and to evaluate the treatment on a longitudinal basis *Methods* A total of 294 ART restorations in 197 children and 191 fissure sealants in 140 children were placed by five middle-level dentists in four secondary schools in Deyang Sichuan Province western China Standard instruments and procedures for ART were used The restorative material used was a high-strength glass-ionomer (Ketac-Molar ESPE) The treatment was evaluated annually after placement by the same examiner who had not been involved in the placement of the restorations or sealants using explorers and mouth-mirrors At the 3-year examination an independent external examiner evaluated the restorations using USPHS criteria *Results* Most of the children did not report discomfort during treatment and 92% were willing to receive ART restorations again The cumulative 1-year and 3-year survival rates of small Class I restorations (<half occlusal width) were 99% and 92% respectively The corresponding figures for large Class I restorations (>half occlusal width) were 90% and 77% Similar success rates for the restorations at 3-years were found using USPHS criteria After 3 years 72% of the sealants were either partially or completely retained Only 2% of the sealed teeth developed fissure caries and these involved teeth where the sealants had been lost *Conclusions* The ART approach for preventing and treating tooth decay in Chinese school children was shown to be appropriate, effective and acceptable The 3-year survival rates of the restorations were high but were related to the size and type of the restoration

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Public Health Center Directors' Opinions about Fluoridation H S MOON*, S H JUNG, A M HOROWITZ, D I PAIK (Dental College, Seoul National University, Seoul, Korea, NIDCR, NIH, Bethesda, MD, USA)

In 1999 a mail survey of Korean local public health center directors (HCD) explored their knowledge and opinions about community water fluoridation (CWF) The purposes of this study were to evaluate the knowledge and opinions regarding CWF among local public HCD, and to identify key factors for the directors' sense of responsibility and willingness to promote fluoridation A 23-item questionnaire was used to measure HCDs knowledge and opinions about fluoridation, decision making about implementing CWF, and demographics The questionnaire was mailed to 100 directors selected using systematic random sampling among 243 public health centers in Korea Two telephone follow-ups to non-respondents increased the final response rate to 74% Overall, Korean HDCs' opinions about water fluoridation were very favorable 38% of respondents thought that health authorities should make the decision to adopt fluoridation in a community, 27% believed that elected officials should make the decision, and 34% believed that the general public should vote on fluoridation In a forward multivariate logistic regression analysis gender and HDCs' opinions that "Fluoridation is a matter of choice" were significantly related to directors' beliefs that health authorities or others should decide to fluoridate public water supplies Female directors were nearly 8 times more likely to believe that health authorities should decide to fluoridate water than were male directors (p<0 01) Directors who disagreed with the statement fluoridation is a matter of choice" were 8 times more likely to think that health authorities should decide to adopt CWF than were those who agreed with that statement (p<0 01) These findings provide valuable insights for future strategies to promote community water fluoridation in Korea

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Enamel opacities in 8-year-old Icelandic children in relation to their medical history as infants IB ÁRNADÓTTIR* H SIGURJÓNS, and WP HOLBROOK (Faculty of Odontology, Univ of Iceland, Reykjavik, Iceland)

Opacities in tooth enamel were found in 34% of subjects in a study of 8-year-old Icelandic children carried out in 1970 before fluoride became widely available in Iceland (Moller P 1981 monograph University of Alabama School of Dentistry) As part of a larger investigation, a random sample of 290 children aged 8 y living in Reykjavik Iceland was examined in 1997-8 and the prevalence of demarcated enamel opacities recorded photographically using standardised techniques with trained and calibrated examiners Prior ethical approval for the study had been obtained Parents of the subjects were asked if the child had had (i) a history of colic as an infant, (ii) if the colic had been treated; and (iii) if the child had a history of repeated middle ear infections Demarcated white enamel lesions, not resembling fluorosis, were seen in 41% of children when the teeth were photographed wet rising to 51% when the photographs of dry teeth were examined In addition enamel hypoplasia was seen in 11% of photographs of wet teeth and 15% of dry teeth The parents of 94/288 children (32 6%) reported that their child had colic as an infant and 52/94 (55 3%) of these children had received medication Three episodes or more of middle ear infections per year were reported for 123/290 (42 4%) of children Non-fluoride opacities of tooth enamel are still prevalent in Icelandic children especially those with a history of infections in infancy. Without a careful diagnosis these opacities might be confused with fluorosis.

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Japanese Elementary Schools Need Oral Epidemiological Information Except on Fluoride T. WATANABE* (Fukuoka Dental College, Fukuoka, JAPAN)

This study was to ascertain what information on oral epidemiology Japanese elementary schools needed In 1997 the author offered 7 items of information and a questionnaire to 188 members of the Japanese Association of School Health who belonged to elementary schools, and offered 9 items and a questionnaire to 163 such members in 1998 One hundred and four people and 47 people respectively responded to each questionnaire The results were as follows For example, 25% of respondents already knew, "Japanese children have more dental caries than children in most of the other developed countries," and 57% of the respondents intended to use the information for education Twenty-three percent of respondents already knew, "estimate of number of people throughout the world using various types of fluoride therapy," and only 19% of the respondents intended to use the information From 45 to 94% of respondents intended to use 13 items of information except 3 items of information on fluoride, whereas only from 13 to 23% of the respondents intended to use the 3 items These results suggest that Japanese elementary schools need oral epidemiological information except on fluoride.